

Amendments of the Claims:

A detailed listing of all claims in the application is presented below. This listing of claims will replace all prior versions, and listings, of claims in the application. All claims being currently amended are submitted with markings to indicate the changes that have been made relative to immediate prior version of the claims. The changes in any amended claim are being shown by ~~strikethrough~~ (for deleted matter) or underlined (for added matter).

1. (Previously presented): A testing system for collecting, storing, and reviewing digital data, serial data, and video data related to events occurring in an automated system comprising a plurality of subsystems comprising an automated controller and at least one peripheral sensor under the direction of the automated controller, the testing system comprising:
 - a) a digital signal capture card for sensing and collecting discrete digital signals from the automated system as digital data;
 - b) a multi-port serial port expansion card for sensing and collecting serial digital communication messages between the subsystems as serial data;
 - c) a video frame grabber and compression card for sensing and collecting video signals as video data;
 - d) a device for indexing and storing said digital data, serial data, and video data with time tags, wherein said time tags are used for relating occurrence of a particular item of a particular data type, whether digital data, serial data, or video data, to the most closely time-related data item from the other said data types; and
 - e) a display for control of said testing system and presentation of said digital data, serial data, and video data in separate windows on the display to a user during review;wherein the display displays each data type, whether digital data, serial data, or video data, in a time-synchronized manner in the separate windows based on the time tags.
2. (Previously presented): The testing system of claim 1, wherein digital data are presented in graphical strip chart format on the display during review.

3. (Previously presented): The testing system of claim 1, wherein video data are presented in picture format of still image or time-motion video images on the display during review.
4. (Previously presented): The testing system of claim 1, wherein serial data are presented in time-ordered message sequence on the display during review.
5. (Previously presented): The testing system of claim 1, wherein serial data are presented as recorded in hexadecimal or ASCII format during review.
6. (Previously presented): The testing system of claim 1, wherein serial data are translated according to message parsing rules during review.
- 7-14. (Cancelled)
15. (Currently amended): A method of testing and evaluating an automated system comprising a plurality of subsystems comprising an automated controller and at least one peripheral sensor, the method comprising the steps of:
 - a) operatively interconnecting a testing system to the automated system;
 - b) collecting discrete digital signals of the automated system generated during operation of the automated system as digital data with the testing system;
 - c) monitoring for serial digital communication messages between the subsystems generated during operation of the automated system with the testing system and collecting the serial communication messages as serial data;
 - d) collecting video images of the automated system during operation of the automated system as video data;
 - e) indexing said digital data, serial data, and video data with time tags;
 - f) recording said digital data, serial data, and video data on a hard disk drive of the testing system; and

- g) displaying said digital data, serial data, and video data in separate windows on a single display in a time-synchronized manner based on time tags.
16. (Previously presented): The method of claim 15, wherein step e) comprises the sub-step of storing said digital data, serial data, and video data on a computer hard drive.
17. (Previously presented): The method of claim 15 further comprising the step of searching said digital data, serial data, and video data for a particular event, a sequence of events, or a combination of events.
18. (Previously presented): The method of claim 15, wherein steps b), c), and d) occur simultaneously over a common time period.
19. (Previously presented): The method of claim 15 further comprising the step of providing a status feedback to a system operator, wherein the status feedback comprises a duration of recording, a current state of said digital data, serial data, and video data, and a total number of state changes of said digital data, serial data, and video data.
20. (Previously presented): The method of claim 15, wherein step b) comprises the substep of monitoring with the testing system for discrete digital signals of the peripheral sensor in parallel without affecting the automated system and collecting the discrete digital signals.
21. (Previously presented): The method of claim 15 further comprising the step of automatically slewing the separate windows of the remaining two data types to a display time selected by a user for one of the separate windows of any individual data type, whether digital data, serial data, or video data.
22. (Currently amended): The method of claim 15 further comprising the step of regenerating the discrete digital signals from the digital data and supplying the discrete digital signals as inputs to the automated system in a format and a timing of an original recording sequence of events to simulate the original recording sequence of events.
23. (Previously presented): The method of claim 22 further comprising the step of evaluating a response by the automated system to the inputs.

24. (Previously presented): The testing system of claim 1, wherein when the user selects a display time of one of the separate windows of any individual data type, whether digital data, serial data, or video data, the separate windows of the remaining two data types are automatically slewed to the display time.
25. (Previously presented): The testing system of claim 1, wherein the testing system monitors for the discrete digital signals of the automated system in parallel without affecting the automated system.
26. (Previously presented): The testing system of claim 1, wherein the testing system accommodates various data modes of the digital data and the serial data in their original format to and from the automated system without modification of the automated system.
27. (Previously presented): The testing system of claim 1, wherein the testing system monitors an original signal of the digital data in parallel without affecting the automated system.